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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,696	02/12/2004	Holger Norenberg		3418

7590  
08/11/2005  
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UNITED KINGDOM

EXAMINER

SUN, XIUQIN

ART UNIT PAPER NUMBER

2863

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/776,696

Applicant(s)

NORENBERG, HOLGER

Examiner

Xiuqin Sun

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-35 and 50-62 is/are allowed.
- 6) ☒ Claim(s) 36-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The specification (including the abstract and claims), and any amendments for applications, except as provided for in 37 CFR 1.821 through 1.825, must have text written plainly and legibly either by a typewriter or machine printer in a nonscript type font (e.g., Arial, Times Roman, or Courier, preferably a font size of 12) lettering style having capital letters which should be at least 0.3175 cm. (0.125 inch) high, but may be no smaller than 0.21 cm. (0.08 inch) high (e.g., a font size of 6) in portrait orientation and presented in a form having sufficient clarity and contrast between the paper and the writing thereon to permit the direct reproduction of readily legible copies in any number by use of photographic, electrostatic, photo-offset, and microfilming processes and electronic capture by use of digital imaging and optical character recognition; and only a single column of text. See 37 CFR 1.52(a) and (b).

The application papers are objected to because the specification (including the abstract and claims) has not text written preferably in a **font size of 12**.

A legible substitute specification in compliance with 37 CFR 1.52(a) and (b) and 1.125 is required.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract

Art Unit: 2863

on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. Specifically, the Abstract of the Disclosure is objected to because it should be in narrative form and generally limited to a ***single paragraph*** on a separate sheet within the range of 50 to 150 words.

### ***Claim Objection***

4. Claims 1, 5-8, 15, 18, 27, 28, 44-46, 50 and 55 are objected to because of the following informalities:

- 1) Claims 1, 18 and 50, remove the "-" at the beginning of each line.
- 2) Claims 1, 5-8, 15, 18, 27, 28, 44-46, 50 and 55, please add proper punctuation to the end of each sentence.
- 3) Claims 1 and 18, please change "the mass spectrometer" into " a mass spectrometer" to correct a minor lack of antecedent basis problem.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 36-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36 recites a method for estimating the rate of permeation on test samples, and claim 42 recites a method for studying the rate of permeation position-revolved at different locations on the test sample. However, none of the methods includes active method steps. A process/method must contain active, positive steps with the phrase "comprising the steps of:" followed by active steps involved in the method/process. Claims 37-41 and 43-49 are rejected to since they depend on rejected independent claims 36 or 42.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 36 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Schubert et al. (U.S. Pub. No. 20050079404).

Schubert et al. teach a method where the rate of permeation is estimated on test samples other than a film, including batteries and complete microelectronic assemblies (section 0003 and 0099-0109). The teaching of Schubert et al. further includes: the test sample is a resin between two parts of the gas container (sections 0026 and 0027).

9. Claims 42, 43, 45 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Bowen et al. (U.S. Pub. No. 20020189325).

Bowen et al. teach a permeability measurement apparatus and method, wherein the rate of permeation is studied position-resolved on different locations on the test sample (section 0047; section 0049, lines 14-16; sections 0055 and 0056). The teaching of Bowen et al further includes: the test sample and the mass spectrometer are movable with respect to each other (sections 0020, 0056 and 000063; Fig. 2); the mass spectrometer is covered in an enclosure containing at least one hole through which the gas enters the mass spectrometer after permeation through the test sample (Figs. 1 and 2, DP); and the gas container has a lid with parallel face and holes extending through the whole thickness of the lid (Fig. 1, the top of container 10).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2863

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert et al. (U.S. Pub. No. 20050079404) in view of Noerenberg et al. (U.S. Pub. No. 20030001086).

Schubert et al. teach the method that includes the subject matter discussed above. Schubert et al. do not mention: the test sample is filled with a gas or a vapour or a mixture thereof through a filling facility such as a valve; the test sample is filled with a gas or a vapour or a mixture thereof inside a filling chamber.

Noerenberg et al. disclose a method where the rate of permeation is estimated on test samples of any type (sections 0010-0024), and teach: the test sample is filled with a gas or a vapour or a mixture thereof through a filling facility such as a valve (sections 0041, 0065 and 0066); the test sample is filled with a gas or a vapour or a mixture thereof inside a filling chamber (sections 0041, 0065 and 0066).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the Noerenberg method to the Schubert battery and electronic system in order to facilitate the test and conduct the test in a more accurate and standard approach (Noerenberg et al., section 0007-0010).

12. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert et al. (U.S. Pub. No. 20050079404) in view of Bowen et al. (U.S. Pub. No. 20020189325).

Schubert et al. teach the method that includes the subject matter discussed above. Schubert et al. do not mention: the rate of permeation through an edge of a sample is measured.

Bowen et al. teach a permeability measurement apparatus and method, wherein the rate of permeation is studied position-resolved on different locations on the test sample, including an edge of the sample (section 0047; section 0049, lines 14-16; sections 0055 and 0056).

In view of the teaching disclosed by Bowen et al., one having ordinary skill in the art at the time the invention was made would be able to apply the same technique to carry out the method for measuring a rate of permeability on an edge of a test sample. The mere application of a known method to a specific instance by those skilled in the art would have been obvious.

13. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert et al. (U.S. Pub. No. 20050079404) in view of Engle et al. (U. S. Pat. No. 6766682).

Schubert et al. teach the method that includes the subject matter discussed above. Schubert et al. do not disclose: the gas container has a movable part for changing the internal volume of the gas container.

Engle et al. disclose a method and system for measuring permeability characteristics of a gas, including: an enclosure housing a mass spectrometer is evacuated by a separate pump or through a bypass to the existing pump on a vacuum



chamber (section 0067); and a gas container that has a movable part for changing the internal volume of the gas container (sections 0074, 0077).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Engle et al. into the invention of Bowen et al. in order to facilitate or enable the measurement of the permeability of the gas under different working environments or conditions (Engle et al., section 0074).

14. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowen et al. (U.S. Pub. No. 20020189325).

Bowen et al. disclose the claimed invention except for a stage holding the sample that is used to move the sample with respect to a fixed mass spectrometer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fix the mass spectrometer (#14) but move the stage (#23) of Bowen et al. in order to make the apparatus easier to manufacture, since it has been held that a mere reversal of the essential working parts of a device involved only routine skill in the art. *In re Einstein*, 8 USPQ 167.

15. Claims 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowen et al. (U.S. Pub. No. 20020189325) in view of Engle et al. (U. S. Pat. No. 6766682).

Bowen et al. teach the method that includes the subject matter discussed above. Bowen et al. do not disclose: the enclosure housing the mass spectrometer is evacuated by a separate pump or through a bypass to the existing pump on the vacuum

Art Unit: 2863

chamber; the gas container has a movable part for changing the internal volume of the gas container.

Engle et al. disclose a method and system for measuring permeability characteristics of a gas, including: an enclosure housing a mass spectrometer is evacuated by a separate pump or through a bypass to the existing pump on a vacuum chamber (section 0067); and a gas container that has a movable part for changing the internal volume of the gas container (sections 0074, 0077).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Engle et al. into the invention of Bowen et al. in order to facilitate or enable the measurement of the permeability of the gas under different working environments or conditions (Engle et al., section 0074).

#### ***Allowable Subject Matter***

16. Claims 1-35 and 50-60 are allowed.
17. Claim 46 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Reasons for Allowance***

18. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 1-17 is the inclusion of the limitation of providing a means to change the relative position between the gas

Art Unit: 2863

container with the test sample and the mass spectrometer for position resolved measurement of permeation. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 18-35 is the inclusion of the limitation of providing a means to change the relative position between gas container with test sample and the mass spectrometry. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 46 is the inclusion of the limitation the enclosure has a conical bottom with a hole and a tube attached to the hole for position-resolved measurements. It is this limitation found in the claim, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

The primary reason for the allowance of claims 50-62 is the inclusion of the limitation of changing the relative positions of mass spectrometer and test sample. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

Art Unit: 2863

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Prior Art Citations***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Echigo et al. (U. S. Pub. No. 20040123646) is entitled "Gas permeability measurement method and gas measurement device".

2) Ascheman et al. (U. S. Pub. No. 20050092068) is entitled "Method and apparatus for measuring gas transmission rates of deformable or brittle materials".

3) Poteat (U. S. Pat. No. 6629043) is entitled "Multiple port leak detection system".

***Contact Information***

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280.


The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Xiuqin Sun  
Examiner  
Art Unit 2863

XS  
August 3, 2005

  
MICHAEL NGHIEM  
PRIMARY EXAMINER